Vermont EMS Today

January 2002

From the Director

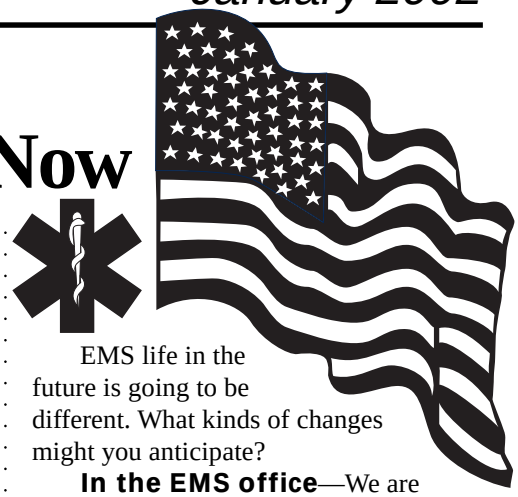
Life Really Will Be Different Now

On September 11, 2001, our lives as Americans and EMS providers changed forever.

I want to begin this communication by thanking the Vermont EMS community for its response on September 11 and in the following days and weeks. By late in the evening of September 11, we had an assessment of personnel and ambulance vehicle availability statewide. Every EMS District in very short order was able to commit ambulances, staffed at or above the EMT-Basic level, for at least 10 days without reducing 9-1-1 primary response to Vermont communities. Vermont's EMS resources were not needed. We received many phone calls and e-mails expressing the wishes of providers and groups to help. As action oriented, "get the job done—whatever it takes," kind of people, many of us shared our frustrations that there was not more to do.

In the days and weeks that followed, everyone worked to pick up the pieces. On September 21st, a mass was held in Montpelier to honor the emergency services workers who lost their lives in New York City. Bishop Kenneth Angell, who lost a brother and sister-in-law on September 11, conducted the mass at the St. Augistine's Catholic Church. Walter Krul and Sandra Fiaschetti of AMCARE Ambulance in St. Albans served as ushers. Jay Wood and Mona Marceau of CALEX Ambulance in St. Johnsbury served as assistants during the service. More EMS units than I can mention had representatives who attended the mass and participated in an emergency services procession from the Statehouse to the church. The Vermont Ambulance Association provided financial support for the reception that followed the mass. The gathering of EMS with representatives from fire and police units around the state resulted in positive emotional energy that I have rarely felt in my 26 years of EMS involvement.

In the days and weeks that followed, everyone worked to pick up the pieces.



EMS life in the future is going to be different. What kinds of changes might you anticipate?

In the EMS office—We are establishing mechanisms to communicate with EMS organizations and leaders in real time about major incidents. On September 11, we used e-mail, telephone, District contacts and our EMS office website to keep providers informed about the status of events and possible requests for assistance from New York. We are attempting to improve our contact information data for future events and will be testing the emergency contacts on a periodic basis

At the organizational level—EMS squads need to take steps to assure that their employees and members have Hazardous Materials Awareness level competencies and are trained in the principles of Incident Command. We cannot afford to be sending EMS personnel into dangerous situations without preparing them to recognize the hazards and minimize their exposure.

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Inside

From the Director—

Life Really Will Be Different Now

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Keeping EMS personnel safe and matching the needs of the emergency with the resources available requires coordination of every agency responding. Upon arrival at a scene, fire, police and EMS all need to stand together and develop a joint plan on how to manage the situation at hand. For incidents involving a fire or police response, EMS does not play the role of incident commander. At the same time, EMS needs to insist that the appropriate agency establish command and communicate clear guidance on what is expected of EMS. If terrorist or other major incidents are going to work smoothly in real life, then the agencies that will be working together need to start training together.

What if we had received a request to send EMS assistance to New York on September 11? Was every ambulance and crew that offered to go, really ready to respond? What supplies (i.e. changes of clothing, sleeping bags, radio batteries and chargers, credit cards for fuel and meals, etc.) would responding agencies and personnel need to take with them? We have now seen that our previous paradigm of mass casualty events being managed on an expanded "mutual aid" model is not necessarily correct. EMS resources in a given area could become disabled for an extended period of time. It may be that we need to relocate and support EMS between states or within states on a relatively long-term basis. EMS organizations need to look internally at their own preparations in this area.

Similarly, what if the unthinkable happens and your EMS organization experiences significant injuries or a loss of life to your crew members? Do you have a file of basic data on each of your personnel such as emergency contact information for next of kin? Do you have photographs of every member? How about fingerprints? Given the nature of the business we are in, we need to be ready to support our providers, their families and our communities when EMS suffers a loss.

While it is essential for EMS to respond to every emergency when called, EMS providers must be clear about why they are responding.

When you respond—Not every terrorist event has an EMS component. The recent anthrax hoaxes are a prime example of this concept. If a person opens a letter and ends up covered in a white powder, do we have a medical emergency? The answer is, NO! Even if the person turns out to have been exposed to anthrax, it will take days to make that determination. In the interim, it is important to avoid contaminating ambulances, EMS personnel and hospital emergency departments. While it is essential for EMS to respond to every emergency when called, EMS providers must be clear about why they are responding. Is EMS there to support the HAZMAT team that is operating in an environment where a team member could become injured? Is EMS at a scene because a person is ill or injured? In the case of an illness or injury in which a nuclear, chemical, or biologic agent may have contaminated the patient, the patient will need to be decontaminated before being turned over to EMS. Whatever the situation, EMS needs to be conservative in staying out of harm's way and avoiding the movement of contaminated patients further through the system.

Triage the scene before you triage the patients. Events much smaller than the September 11 attacks would overwhelm any EMS organization in Vermont. It is OK to ask for help when the situation requires resources that you don't have. Vermont Emergency Management is the contact point that can muster specialized help such as the HAZMAT team, epidemiologic support, the FBI, military resources, out-of-District EMS response when local mutual aid is exhausted, etc. In conjunction with an incident command structure at a local scene, requests for assistance can be made directly through 9-1-1 to the duty officer at Vermont Emergency Management. VEM has excellent capability to bring an array of state and federal resources to assist you.

EMS is a system designed to save lives. Unfortunately the resources of the EMS system are not endless and the people within the system are not all-knowing. We need to learn some new skills. We need to plan and organize ourselves for some different scenarios than those we have faced in the past. In these ways, we can take some reasoned and reasonable steps to prepare for the future. The events of September 11 will shape our lives both as EMS providers and citizens of this great country. It is up to all of us to see that those events do not diminish the quality of our lives.

— Dan Manz
State EMS Director

Vermont EMS Today
is published as a service for Vermont's emergency medical providers. Suggestions, comments and news items are always welcome. Write or call Leo J. Grenon, Vermont Dept. of Health, 108 Cherry Street, Box 70, Burlington, VT 05402. (802) 863-7310 or 1-800-244-0911 (in Vermont only). Email: VTEMS@VDH.STATE.VT.US

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This publication can be obtained in other forms: 1-800-244-0911, 1-802-863-7310; ask for Leo Grenon. If you want to reprint articles from this or any Vermont EMS Today publication, please contact Leo Grenon at the above numbers.

Training UPDATE

EMS Educator Conference

Low registration led to postponement of the EMS Educator Conference originally scheduled for November 3, 2001, in Stratton. The conference will take place sometime in the spring of 2002. The EMS Office and the Initiative for Rural EMS will send out notices of the conference when a new date has been determined.

Hollister-Stier Syringes

Hollister-Stier Laboratories has temporarily ceased production of the Hollister-Stier syringe while the company redesigns the device. The preloaded syringe, which contains two doses of epinephrine for subcutaneous injection, is used by many EMT-Intermediate level agencies in Vermont. The company reports that the new product should be out at some point in 2002. In the meantime, there may be some Ana-Kits left in the distribution chain. The Ana-Kit, which is intended for laypeople, contains chewable antihistamine tablets in addition to a Hollister-Stier syringe. EMS agencies looking for an alternative to the Hollister-Stier syringe can use the Epi-Pen.

EMS Instructor-Coordinator Course

The latest EMS Instructor -Coordinator course is taking place January 19-20, February 16-17 and March 16-17, 2002. The Initiative for Rural EMS sent notices to districts of the dates and location of the course.

On-Line Resources

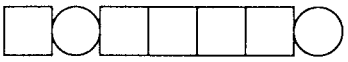
The Brain Trauma Foundation has made new brain injury guidelines available at its Web site, *www.braintrauma.org.* The new guidelines are the result of a review of the evidence for traditional interventions used with head injuries. The group recommends that hyperventilation of head injured patients now be restricted to those patients who are experiencing rapid deterioration or displaying signs of herniation. This is in contrast to the broader traditional recommendation for hyperventilation of head injured patients with an altered mental status.

— Mike O'Keefe
EMS Training Coordinator

Scramblers

By Ray Walker

First unscramble the letters to spell some common EMS words. Write the words in the boxes and circles to the left. Then use the circled letters to spell the answer to the question.



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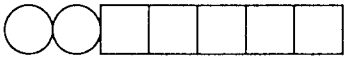

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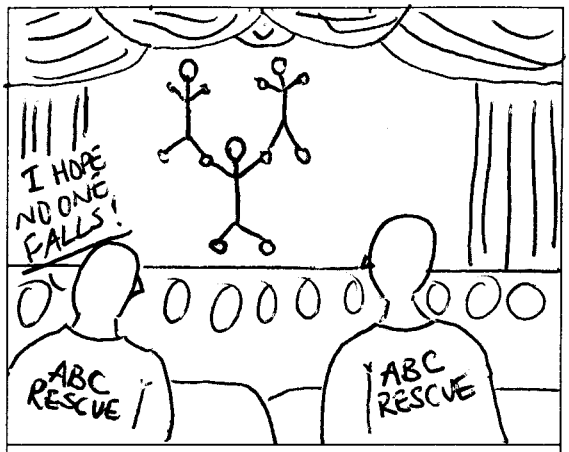
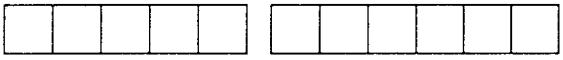


What did the EMTs look for at the theater?

Answer: 

(ANSWERS ON PAGE 14.)

Parents, Relatives, Caregivers… The Question: To Ride or Not To Ride?

You have been called to help an injured child. After assessing the patient's injuries, you decide that she will need to go to the hospital by ambulance. You discuss this decision with the patient's father and then proceed to load the patient into the ambulance. At this point, you have another decision to make…should the patient's father ride in the ambulance too? Should he ride in the back with the patient or up front with the driver?

This type of situation is very common during pediatric calls. The following points of consideration should help you to determine when it is appropriate for a caregiver to ride in the ambulance with an injured child.

Who is a Caregiver?

The term "caregiver" is typically understood to mean parent or guardian. For the purpose of this article, caregivers might also include other family members or child care providers. Caregivers also include people who take care of elderly or disabled people.

Patient and Passenger Safety:

We all understand the importance of safely restraining our patients. Since there is always the remote chance of an ambulance crash, we need to ensure that our patients and passengers are buckled up. Most passenger restraint equipment in an ambulance is designed for adults; it is often a challenge to safely restrain a child in an ambulance. Some manufacturers offer special equipment designed to restrain pediatric patients. Since little research has been done on ambulance crashes, it is difficult to provide you with any concrete guidance for selecting and using pediatric restraint devices in an ambulance. Until more research has been completed, please consider the following common sense suggestions:

Do Not allow a caregiver to hold a pediatric patient in his/her arms while the ambulance is in motion or in traffic[1]. It was once common practice to strap the caregiver onto the stretcher and then ask him or her to hold the patient. We now know that the forces involved in even a minor crash are enough to rip a child from the arms of a caregiver.

Do ask everyone in the back of the ambulance to buckle up. Parents and caregivers riding in the ambulance should always remain buckled into their seat. Ambulance attendants should also buckle up whenever possible. As we all know, our job as EMS providers requires us to move around in the ambulance. Whenever you are seated, get into the habit of buckling up. It only takes a few seconds and it could save your life, the life of your crew and the life of your patient. Unrestrained people in an ambulance become dangerous projectiles during an ambulance crash. If your patient is buckled up and you are not, your body could be thrown around the ambulance with enough force to severely injure or kill you and your patient. Several years ago, in the greater Burlington area, an unrestrained EMS provider was thrown onto another EMS provider when the ambulance came to an abrupt stop. An EMT suffered a femur fracture as a result of this incident. Unrestrained equipment in an ambulance is also a potential hazard. Bags and monitoring equipment should be strapped down whenever possible.

We need to ensure that our patients and passengers are buckled up.

The Insurance Question:

Since details can vary depending on your organization's insurance policy, you should check with your insurance agent for specific advice and guidance on your liability coverage. In general, most insurance policies cover both patients and non-patient passengers in the event of a crash. It is very unlikely that your insurance carrier will refuse to cover non-patient passengers. If you agree to allow an uninjured caregiver to ride in the ambulance, insurance coverage is probably not an issue.

Why should caregivers ride in the ambulance?

Caregivers are an asset to you during an emergency. Chances are, the caregiver can provide you with valuable information. For example, the caregiver probably knows the child's medical history, the child's normal mental status and other information such as name, date of birth and weight. Involving the caregiver in the assessment and treatment of the patient can make your job easier.

Caregivers also provide a measure of comfort to an injured or sick child. Having a familiar face next to your patient can reduce anxiety and make the entire call less stressful. In many cases, you can also reduce the anxiety of a caregiver by involving him or her in the care of the child. Remember that we are treating an entire family, not just the patient.

The caregiver of a child with special healthcare needs can probably provide you with very detailed information about the child's medical background. These caregivers often have a thorough knowledge of the conditions affecting the child.

Should caregivers ride up front with the driver or in back with the patient?

There are many factors to consider when making this decision. First of all, do you have room in the ambulance for an additional passenger in the back? Since most ambulances have five seating

(CONTINUED ON NEXT PAGE)

positions in the patient compartment, there is usually plenty of room in the back for one more passenger. You should also consider the caregiver's emotional condition. A caregiver experiencing an emotional breakdown will probably not be in a condition to support and reassure the patient. Sometimes it may be appropriate to ask a caregiver to ride up front with the driver.

There are risks with asking a caregiver to ride up front. I've heard stories about distressed caregivers who become a distraction to the driver. In some cases, an emotionally distressed caregiver might climb back into the patient compartment and become a hindrance to the crew. Of course, these are extreme examples, but they are worth considering.

Are there times when a caregiver should not ride with the patient?

In some cases, it may be wise to avoid allowing a caregiver to ride in the ambulance at all. As mentioned above, the caregiver may be in an extremely unstable emotional state. Children often look to their caregivers for reassurance during a crisis. If a caregiver is visibly distressed, they might have a negative effect on the patient. If you speak to the caregiver using a calm and confident voice, you may be able to calm him or her down. However in some cases, you will not have the time or ability to calm the caregiver.

There are a number of circumstances where common sense tells us that we should avoid allowing a caregiver to ride in the ambulance. For example, is the caregiver violent? Is the caregiver also injured? Each call presents details that must be considered on a case-by-case basis.

Perhaps the best thing we can do is treat all caregivers with the same professional respect we give to our EMS colleagues. If the roles were reversed, you would want to be treated respectfully by the EMS providers caring for your child.

— William Clark
Pediatric EMS Coordinator

1.Wertz, E. (2002) *Emergency Care for Children.* Albany, NY: Delmar

healthy homes

Vermont Department of Health
1-800-439-8550

EMS Licensed Services

MONEY IS AVAILABLE FOR YOUR COMMUNITY:

- ✓ Attend the 2002 EMS Conference Healthy Homes Workshop Friday, April 5, 0830–1630, at the Sheraton in Burlington, VT to be eligible.
- ✓ Learn about indoor environmental hazards.
- ✓ Apply for $ monies $.
- ✓ Make home safety a prevention issue in your community.

For information: Call Dawn Anderson, Bill Clark, Erica Holub, or Sheri Lynn 1-800-439-8550.

2001 EMS Award Winners!

Again we congratulate our 2001 EMS Award Winners! We salute as well all our EMS pre-hospital care providers for a job well done.
—Dan Manz, EMS Director

Leader of the Year
Jay Wood
Caledonia Essex Area Ambulance Service, Inc.

First Response Agency of the Year
Middletown First Response Squad

Nurse of the Year
H. Dale Porter, R.N.
Copley Hospital

Physician of the Year
Richard Marasa, M.D.
Springfield Hospital

First Responder of the Year
Clinton Jackson
Wallingford Rescue, Inc.

EMT-Intermediate of the Year
Heidi Wood
Williston Rescue

Educator of the Year
Patricia Edwards
White River Valley Ambulance

EMT-Basic of the Year
Cheryl Estey
Starksboro Emergency Rescue Unit

EMT-Paramedic of the Year
James Collins
Regional Ambulance Service

Ambulance Service of the Year
Charlotte Volunteer Rescue Squad

Vermont SAFE Kids Injury Prevention Award
Catherine Clark
Northfield Ambulance Service

Vermont Ambulance Association Chuck Hoag Memorial Scholarship
Donna Colburn
Newport Ambulance Service

14th Annual Vermont EMS Conference
Awards Criteria

As EMS Conference 2002 approaches, it is time again to consider nominating individuals or services for the 14th Annual EMS Awards. Since our first conference in 1989, over 100 of Vermont's EMS providers have been recognized for their outstanding contributions to EMS. Enclosed in this newsletter is a helpful form to assist those wishing to submit nominations. Please feel free to copy this form as necessary. Additional forms and criteria will soon be available at our website: *http://www.state.vt.us/health/ems*

When writing a nomination letter please keep in mind that a single "quality" nomination letter is of greater significance than several poorly-crafted ones. Letters or narratives should be easy to comprehend and thorough in describing the accomplishments of a nominee. Below are a few helpful hints to consider when submitting a nomination:

- Consider the correct awards criteria for the individual you are interested in nominating.
- Remember, awards are based on an individual or service's overall contribution to the field of EMS. Avoid focusing on single acts of heroism.
- Be sure to completely identify the individual or service at some point in the nomination and the exact award you wish them to be considered for. Be sure that your nominee fits the criteria for the appropriate award category.
- Make a simple outline of your thoughts. Jumbled information is confusing and often clouds the characterizations that recognize outstanding nominees.
- When you write your nomination, keep in mind that it will be read by several committee members who may have little familiarity with the person or service.
- Have another person proofread your work.
- Please arrange for the nominee or service to be present at the Vermont EMS Awards Ceremony held Saturday, April 6, 2002.

EMS AWARDS INFORMATION

The annual Vermont EMS Awards Ceremony is a public opportunity to recognize our state's finest EMS professionals. In many ways these are the "people's choice" awards. Nominations come from colleagues, friends, other public safety agencies, municipal officials and grateful patients. The selection of the 2002 award recipients is conducted by committees of peers, including the 2001 award winners. Nominations for this year's 2002 awards program must be received by Friday, March 15th, 2002.

FIRST RESPONDER/EMERGENCY CARE ATTENDANT OF THE YEAR

EMT-BASIC OF THE YEAR

EMT-INTERMEDIATE OF THE YEAR

EMT-PARAMEDIC OF THE YEAR

- Is currently certified as a Vermont ECA, EMT-Basic, EMT-Intermediate, or EMT-Paramedic.
- Has made exceptional contributions to his/her EMS organization.
- Has strong and consistent clinical skills at his/her certification level.
- Has made an outstanding contribution to the EMS system either within or outside of his/her squad or service.

EMS EDUCATOR OF THE YEAR

- Has made a recognized contribution to the Vermont EMS system through outstanding organization or delivery of education to EMS providers.

EMS LEADER OF THE YEAR

- Is a leader of either a Vermont-licensed ambulance service, first responder service, EMS district, hospital, or the community.
- Has played a major role in EMS system development or the development of an individual EMS organization.
- Has demonstrated substantial leadership.
- Has represented the EMS system in a positive manner to other groups and organizations.

EMS NURSE OF THE YEAR

EMS PHYSICIAN OF THE YEAR

- Is currently a licensed nurse (at any level) or licensed physician.
- Has made an exceptional contribution to the Vermont EMS system.

FIRST RESPONSE SERVICE OF THE YEAR

AMBULANCE SERVICE OF THE YEAR

- Is currently a Vermont-licensed first response or ambulance service based in Vermont (licensure level is not to be considered).
- The service has made an outstanding contribution in the past year to public education.
- The service maintains positive, outstanding relations with the communities it serves and the local EMS District Board.
- The service takes meaningful and visible steps to assure the professionalism of personnel and the quality of patient care.
- The service has identified areas in which performance could be improved, and has taken organized steps to improve those areas in the past 2-3 years. (Examples may include response times, QA/QI programs, and/or advanced levels of training.)

VERMONT SAFE KIDS INJURY PREVENTION AWARD

- Is currently affiliated with an EMS district or a licensed ambulance or first responder service in Vermont.
- Has made an exceptional contribution to his/her organization and community in promoting injury prevention and public education.

VERMONT AMBULANCE ASSOCIATION CHUCK HOAG MEMORIAL SCHOLARSHIP

The Vermont Ambulance Association is pleased to offer the Chuck Hoag Memorial Scholarship in the amount of $500, available to any member in good standing of a Vermont-licensed EMS organization. This scholarship is to be used to further education in the provision or management of medical care. Recipients will be chosen by the VAA. Please submit nominations or applications to the Vermont EMS Office. These forms will then be forwarded to the VAA Scholarship Committee.

If you have any questions regarding this process or would like assistance in nominating an individual or service, please contact the Vermont EMS Office. It is a rare occasion that we take the time to recognize the many accomplishments in EMS. This is the ideal opportunity to recognize those who make a substantial contribution to EMS in our state!

— Steve Salengo
State EMS Operations Coordinator

Number of people holding Vermont EMS certification as of 9/30/01:

ECA		807
EMT–Basic	(does not include advanced levels)	1199
EMT–I		768
EMT–P		88
Total EMTs at all levels:		**2,055**

Training Tidbit

The next time you hear an EMT say a patient had ST segment elevation or depression on his prehospital electrocardiogram (ECG), be a little skeptical. That assessment may very well be incorrect.

Most monitors used in EMS are calibrated for reading ECG rhythm strips. Monitors used in hospitals, on the other hand, are typically calibrated so that they can evaluate ST segment elevation and depression. The difference is significant.

In San Diego, emergency physicians evaluated the accuracy of ST segment elevation or depression in 34 normal volunteers between the ages of 20 and 30 (Hebel GA, Hutton K, et al. *The accuracy of ST segment elevation or deviation in prehospital cardiac monitoring.* J Emerg Med 1994 Mar-Apr; 12(2):207-11). After confirming that the volunteers all had normal 12-lead electrocardiograms, the researchers used standard prehospital monitors to take the ECGs of these subjects during a simulated transport.

The results? Fourteen of the 34 subjects (41%) with normal electrocardiograms demonstrated abnormal ST segments on prehospital monitors. Most of them (11) had ST segment depression. The other three had ST segment elevation. The study concluded that "normal individuals can exhibit ST segment deviation on standard prehospital cardiac monitoring equipment during routine transport."

The study looked at patients without heart disease. What about patients who do have heart disease?

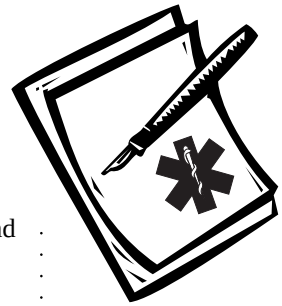
How accurate is the standard prehospital monitor on these patients? The evidence here is lacking. Experienced providers can easily recall instances, though, where patients with angina or myocardial infarctions had normal ST segments on the prehospital monitor but significant deviation on the hospital's 12 lead monitor. It is not clear how often this phenomenon occurs.

Before you describe a patient's ST segment, check the type of monitor you are using. Unless the manual for your monitor specifically says your machine is calibrated for ST segment evaluation or 12 lead interpretation, your monitor is not going to be very accurate when used for this purpose. In this case, you will need to restrict its use to rhythm interpretation without ST segment determination.

— Mike O'Keefe
EMS Training Coordinator

In the Field…

PART II IN A SERIES OF TOPICS RELATED TO EMS FIELD OPERATIONS



"GREY-AREA" RESPONSE

OK…You are at your squad building, and you hear the tones go off, just as they have, it seems, a million times before. Dispatch requests your response to a local high school soccer field for a "16 year-old male with an ankle injury." The scene is about 12 minutes away under normal driving conditions and 8-9 minutes if you respond "Code 3." The only other information you receive from dispatch is that the patient is conscious, alert, and oriented. You are the senior crew member, and have two other rescuers on your crew. As you board the ambulance and clear the bay, you consider the most appropriate response to this call. So…do you respond Code 2 or Code 3? *For the record, Code 2 typically refers to a response without using lights or sirens (but not making unnecessary stops along the way), and Code 3 refers to an urgent response using lights and sirens. So-called "Code 2-and-a-half," lights only, or lights and sirens used only at intersections or when passing a vehicle, will not be discussed in this article since these are generally not recommended manners of rescue response.*

This is a classic scenario, and one that continues to pose questions among rescuers, administrators, medical advisors, law enforcement personnel and attorneys: "Under what circumstances should we respond Code 2 or Code 3?" Thus, I have titled the second article in this series "Grey-Area" Response.

We have all heard about the risks associated with operating an emergency vehicle with lights and sirens on. An excerpt from Title 23 of Vermont Statutes Annotated, Section 1050b (interesting section number, isn't it?) reads: "This section does not relieve the driver of an authorized emergency vehicle from the duty to drive with **due regard** [emphasis added] for the safety of all persons using the highway." The philosophy of driving with "due regard" is especially important for those operating ambulances Code 3.

There are many types of calls in which a Code 3 response is indicated and appropriate, such as "chest discomfort" or "unresponsive patient." But what about those calls that could go either way? Let's revisit the ankle injury case and explore some considerations.

The caller states that a teenage male suffered an ankle injury and was conscious at the time of the call. Does an ankle injury of this kind, in and of itself, require a Code 3 response? Is a Code 3 response even indicated? To answer these questions, we must understand our service's standard operating procedures/ guidelines (SOPs/SOGs) and how they apply to a response.

The philosophy of driving with "due regard" is especially important for those operating ambulances Code 3.

Some areas inside and outside of Vermont use an EMS priority dispatch system (which I will abbreviate as PDS). In this system, the dispatcher obtains directions and nature of the call, gathers information about the circumstances of the call, and based on established protocols, assigns a priority code. Using an out-of-state system as a reference, a Priority 1 call indicates a Code 3 response (e.g. difficulty breathing, unresponsive). Priority 2 indicates a Code 2 response (minor injury where time is not a critical factor to save life or reduce injury, e.g. fever, nausea). Priority 3 is designated for calls such as fire standbys or scheduled patient transfers. It is important to note that although the dispatcher assigns a priority to the call, the crew may use their own discretion in their response. For example, a rescuer may have reason to respond Priority 1 to a call originally dispatched as Priority 2 (or vice versa) if he or she has additional information or past experience with the same type of call or the same patient.

The PDS dispatcher, based on the information previously mentioned, would likely assign a Code 2 response to this injured ankle call. We have no indication that uncontrolled bleeding is occurring, that the patient has any other injuries, or that this is a life-or-death, serious-injury, or time-critical situation (thus necessitating a Code 3 response). In Vermont, where many squads still respond Code 3 to all "emergency," i.e., unscheduled, calls, might it be appropriate to instead respond Code 2 in this case?

This makes good sense, provided that the dispatcher is adequately trained to recognize the delineation among these priorities, and gathers enough information about the type of call to make an accurate determination. In many cases, it is the dispatcher (not the crew) who directly communicates with the caller. The PDS also gives guidance to other responders as to whether they should be going Code 3 to the station or scene, or if Code 2 is appropriate.

On the flip-side, suppose you automatically respond Code 3 to this call (or you do not have a PDS), and while responding, your ambulance collides with another vehicle. Even if the operator of the other vehicle committed some sort of traffic offense, the philosophy of due regard enters the picture. The driver of the ambulance may still be implicated in the cause of the crash, and further, any civil legal actions, simply by operating Code 3, because the mere usage of lights and sirens may be construed as a "disruption" of the normal flow of traffic. A key question posed to the ambulance crew might be, "What criteria of the call met the need to respond with lights and sirens?" If this is asked, the driver and crew may need to explain why Code 3 operation was necessary. Could you justify a Code 3 response (to save, at most, 3-4 minutes) for this particular call?

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Of course, not all EMS agencies have the option of using a PDS. For many services in Vermont, the ambulance crews decide how they should respond to a call based on the dispatch information received, which is sometimes limited. Also, services may not have specific policies related to the use of lights and sirens. I encourage you to speak with your service chief if you have any questions about response policies or guidelines.

There is an increasing amount of credible research pertaining to this issue, and it is important to note that EMS agencies and dispatch services both have vital (if not equal) roles in this dispatch/response system. My intent in writing this article is to stimulate thought and discussion regarding how we respond to different types of calls, and is **not** intended to propose changes or override any present service policies or guidelines. I am sure that many of you have previously considered for yourselves this controversial "grey-area," and I welcome your thoughts on this issue.

— Steve Salengo
State EMS Operations Coordinator

Central Vermont Public Service

With winter and the traditionally stormy weather upon us, I am writing to reinforce an important safety message, and elicit your help in ensuring all emergency service workers hear it. With bad weather will come inevitable power interruptions, car accidents and resulting downed wires. Extreme caution is required of you, your co-workers and the general public.

While we do our utmost to repair service as quickly as possible, it is imperative that emergency crews, in particular, are aware of the risks of downed lines, whether they are electrical, cable or phone lines. Cable, phone and electrical lines are all potentially dangerous and should be treated with the utmost caution.

There is no way — even for an expert — to visually determine whether a downed lined is energized or dead, so our crews treat every line as if it were alive, and we encourage you and your coworkers to do the same. With more and more people using generators, which can back-feed energy into downed lines, this is even more important. The best advice is to stay away from these utility lines, and contact the company to alert us to a problem. We need your assistance in keeping people and animals away from the wires until our employees can repair them or shut off the power.

Public safety is our first priority at Central Vermont Public Service. Please take the time to discuss this issue with your employees or fellow volunteers, and provide each of them with a copy of this letter.

If you have any questions, or if I can be of any assistance, you can reach me by phone at 802-747-5540 or by email at *hhammon@cvps.com*. Thank you.

— Hugh Hammond, Director of Safety
Central Vermont Public Service

The Role of EMS in Responding to Bioterrorism Threats and Incidents

Long after the emotional impact of the events of September 11 has diminished, the changes resulting from this event will continue to affect us. This is especially true in emergency services, not just because of the loss of so many of our colleagues, but because the public has increased its expectations of, and respect for, emergency service workers.

Since those events, law enforcement, the fire service and EMS have responded to numerous situations where there was the threat of an intentionally spread disease. To date, these cases have been restricted to the presence or threat of anthrax spores. Whether this will be followed by further incidents with anthrax or with other agents, no one can say. In any case, EMS must be prepared to deal with such situations. As part of that preparation, it is essential that public safety and other responders understand each others' roles and capabilities.

Staff from the Department of Health EMS Office have participated in the statewide terrorism task force for some time now. This has allowed individuals from many agencies to get to know each other and to plan for events similar to the ones we have experienced recently. In light of the September 11 attacks, this cooperation and collaboration has taken on new meaning and new urgency.

Bioterrorism is only one means by which a population can be threatened. Other threats, such as chemical, nuclear and explosive, can also occur. Management of those incidents will differ from what is offered here, depending on the particular circumstances.

Responsibilities of Different Agencies

Management of a bioterrorism threat or incident brings many different agencies together, some of which may never have worked together before. Depending on the incident, this may include law enforcement, fire departments, EMS agencies, Emergency Management staff, public health officials, hazardous materials teams, municipal officials, hospital staff and others. How can the incident be managed in a safe and efficient manner?

Bioterrorism is only one means by which a population can be threatened.

The Incident Command System (ICS) is a well recognized means of organizing resources when multiple agencies respond to an emergency and numerous actions and decisions are needed. At some incidents, there are several organizations that may have shared authority and responsibility. In this case, a structure called Unified Command allows the Incident Commander position to be shared among several organizations. This group sets the overall incident objectives, then guides and approves the incident action plan. The Unified Command members retain their authority with their own agencies, but work with each other to resolve issues in a cooperative fashion. This allows responding agencies to focus their efforts on managing the situation at hand while at the same time avoiding duplication of effort.

With this format at work, there are a number of tasks which usually fall to particular agencies. Patient care, of course, is an EMS responsibility. Threat assessment is best left in the hands of trained law enforcement officers. Decontamination and possibly specimen retrieval are responsibilities of the fire service and hazardous materials teams. Specimen testing, when appropriate, is a function of the state health laboratory or the Centers for Disease Control and Prevention (CDC) in Atlanta. Education and reassurance are important elements of managing a bioterrorism threat or incident and are typically handled by public health authorities, including specialists in epidemiology, the study of health-related events in populations.

EMS Responsibilities and Actions

The primary responsibility of EMS, as always, is to care for and transport the sick and injured. This means the role of EMS in responding to threats of bioterrorism is relatively small compared to other emergency services. Since biological weapons do not typically cause symptoms immediately, there is little *emergency* medical care needed for someone who has sustained such an exposure.

Scene size-up now has an additional step: threat assessment. This is best done by qualified personnel, usually law enforcement, especially if there is any question of how safe the situation is.

Once a qualified authority has determined the scene is safe, an EMS provider may come across two kinds of situations where bioterrorism may be involved: an injury or illness where the patient is, or may have been, contaminated and an injury or illness where it is reasonable to believe the patient has not

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been contaminated. A symptomatic patient at a potential bioterrorism scene who is not contaminated should receive normal EMS care. A symptomatic contaminated patient, on the other hand, needs to be decontaminated before EMS treatment or transport can take place. Only those who are trained and equipped to decontaminate a person safely should perform this task. Once the patient has been decontaminated, EMS can begin assessment and treatment. Under no circumstances should EMS transport a contaminated patient to an emergency department. Doing so might lead to contamination of the emergency department and closure of that unit or even the entire hospital.

A person at a potential bioterrorism scene who may have been exposed but who is not experiencing any symptoms may need to be decontaminated. This assessment is best left to those who are qualified to make it. Afterward, the person should receive information regarding signs and symptoms to watch for, with instructions to see a personal physician or other appropriate health care provider as needed. There is no treatment for EMS to provide under these circumstances. The table below provides this information in a schematic format.

What about a patient who believes his signs and symptoms are the result of an exposure more than 24 hours ago? If there is reason to believe the patient may still be contaminated, as unlikely as that is, proceed as you would at a potential exposure incident: after qualified rescuers decontaminate the patient, treat and transport the patient. It is much more likely that there will be no reason to believe the patient may still be contaminated (e.g., the patient has showered and changed clothes since the potential exposure), in which case you should employ normal procedures for treatment and transport.

General principles regarding the EMS role at an incident of threatened bioterrorism include:

- If you are not called, but hear about such an incident, don't volunteer to respond. As the number of agencies and individuals at a scene increases, it becomes more difficult to manage the scene. The role of EMS is restricted to treating and transporting people who are injured or ill.
- If you are called, respond. If there are no reports of injuries, there is little or no reason to use lights or sirens.
- Keep safety in mind first. Take reasonable precautions, but do not go overboard.
- Cooperate with other agencies at the incident, e.g., fire, law enforcement.
- Don't go inside a building reported to be contaminated. This is a job for others who are properly trained and equipped to go into a hazardous environment.
- Don't exceed your training and equipment. If you are not trained or properly equipped to perform a particular procedure, do not perform it.
- Refer those with questions to appropriate resources. Resist the temptation to shoot from the hip.
- If you respond, your role is to treat those who are injured or ill. If no one needs emergency medical care, at the request of the incident commander you should stand by in case of injury or illness (e.g., chest pain) not directly related to an exposure.
- Don't let anyone make you the incident commander if you are not qualified for that role.
- Use the Incident Command System (ICS) with Unified Command and contact your local emergency department as soon as possible for advice regarding decontamination and transport.
- Keep in mind that hysteria can be more contagious than any organic disease. A calm approach on your part can prevent some very stressful situations for people involved in a potential exposure.

Patient Condition	Symptomatic	Not Symptomatic
Contaminated	decontamination (by qualified personnel) **EMS treats and transports after decontamination**	decontamination (by qualified personnel) watchful waiting
Not Contaminated	no decontamination **EMS treats and transports using normal procedures**	no decontamination no treatment (no patient)

EMS actions under different conditions when there is a threat of bioterrorism

Personal Protective Equipment

The CDC has made recommendations for appropriate personal protective equipment (PPE) for firefighters and other first responders who risk exposure

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The Role of EMS in Responding to Bioterrorism Threats and Incidents

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to a potentially dangerous substance. EMS providers should select PPE based on the information available about the risk. This will likely include disposable gloves and dressings over open wounds. It may include face and eye protection or a HEPA or N95 mask. One way to decrease the spread of airborne disease is to place a nonrebreather mask on the patient (another reason not to use a nasal cannula). Good general hygiene, as always, is important. Handwashing is a vital part of this. Follow instructions from the experts regarding removal and washing of clothes.

Diseases Considered to be of Risk

The Centers for Disease Control and Prevention (CDC) and others have determined that attacks with certain diseases are more likely than with others. Diseases considered to be of risk include anthrax, smallpox, plague, tularemia, botulism and hemorrhagic fevers. Information about these diseases from the CDC and the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) has been adapted to provide the brief descriptions below. For more information, go to the CDC's web page covering biological agents/diseases and chemical agents *(www.bt.cdc.gov)* or USAMRIID's site *(www.usamriid.army.mil/links/bdr.htm)*. Additional information is available from the Journal of the American Medical Association (JAMA), which has run a series of articles over the last several years about this topic. JAMA has made available five articles on bioterrorism by the Working Group on Civilian Biodefense—addressing anthrax, smallpox, plague, botulinum toxin, and tularemia—free of charge at *jama.ama-assn.org.* A link to the Vermont Health Alert Network is on the web site maintained by the Vermont EMS Office *(www.state.vt.us/health/ems).*

ANTHRAX

Until recently a disease of animals and those who process animal hides, anthrax results from infection with *Bacillus anthracis.* Human anthrax has three forms, depending on the body system affected: cutaneous, inhalation, and gastrointestinal.. Anthrax can survive for decades in soil because the bacteria form spores to protect themselves from harsh environmental conditions. Anthrax is not contagious; the illness cannot be transmitted from person to person.

Cutaneous anthrax is the most common naturally occurring type of infection (more than ninety-five percent of naturally occurring cases) and usually occurs after skin contact with contaminated meat, wool, hides, or leather from infected animals. The incubation period ranges from one to twelve days. Skin infection begins as a raised bump that resembles a spider bite, but within one to two days it develops into a vesicle (blister) and then a painless ulcer, usually one to three centimeters in diameter, with a characteristic black necrotic (dying) area in the center. The lesion is usually painless, but patients also may have fever, malaise, headache, and swollen lymph glands. Cutaneous anthrax infections occur when the bacterium enters a cut or abrasion on the skin. About 20 percent of untreated cases of cutaneous anthrax will result in death. Deaths are rare if patients are given appropriate antimicrobial therapy.

Inhalational anthrax is the most lethal form of anthrax. Anthrax spores must be aerosolized in order to cause inhalational anthrax. Studies show that 4,000 – 5,000 spores must be present to cause an infection. The incubation period of inhalational anthrax among humans is unclear, but it is reported to range from one to seven days, possibly ranging up to 60 days. It resembles a viral respiratory illness and initial symptoms include sore throat, mild fever, muscle aches and malaise. These symptoms may progress to respiratory failure and shock, often with meningitis. If untreated, inhalational anthrax is essentially 100% fatal. Among the recent cases resulting from contaminated letters during October – November 2001, early detection and treatment resulted in survival of more than 50% of the patients.

Gastrointestinal anthrax usually follows the consumption of raw or undercooked contaminated meat and has an incubation period of one to seven days. It is associated with severe abdominal distress followed by fever, sore throat, dysphagia, fever, and regional lymphadenopathy. Lower bowel inflammation usually causes nausea, loss of appetite, vomiting and fever, followed by abdominal pain, vomiting blood, and bloody diarrhea. This form of anthrax has never been reported in the United States. For gastrointestinal anthrax, the case-fatality rate is estimated to be 25 percent to 60 percent and the effect of early antibiotic treatment on that case-fatality rate is not known.

Persons with an exposure or contact with an item or environment known, or suspected, to be contaminated with *B. anthracis*—regardless of laboratory test results—should be offered antimicrobial prophylaxis.

Based on studies in nonhuman primates and other animal and *in vitro* data, ciprofloxacin or doxycycline should be used for initial intravenous therapy of known or suspected anthrax disease until antimicrobial susceptibility results are known.

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PLAGUE

Plague is an infectious disease of animals and humans caused by the bacterium *Yersinia pestis,* found in rodents and their fleas in many areas around the world. Pneumonic plague occurs when *Y. pestis* infects the lungs. The first signs of illness in pneumonic plague are fever, headache, weakness, and cough productive of bloody or watery sputum. The pneumonia progresses over two to four days and may cause septic shock and, without early treatment, death.

Person-to-person transmission of pneumonic plague occurs through respiratory droplets, which can only infect those who have face-to-face contact with the ill patient.

Early treatment of pneumonic plague is essential. Several antibiotics are effective, including streptomycin, tetracycline, and chloramphenicol.

Prophylactic antibiotic treatment for seven days will protect persons who have had face-to-face contact with infected patients.

BOTULISM

Botulism is a muscle-paralyzing disease caused by a toxin from a bacterium called *Clostridium botulinum.* There are three main kinds of botulism:

- Foodborne botulism occurs when a person ingests pre-formed toxin that leads to illness within a few hours to days. Foodborne botulism is a public health emergency because the contaminated food may still be available to other persons in addition to the patient.
- Infant botulism occurs in a small number of susceptible infants each year who harbor *C. botulinum* in their intestinal tracts.
- Wound botulism occurs when wounds are infected with *C. botulinum* that secretes the toxin.

With foodborne botulism, symptoms begin within six hours to two weeks (most commonly between 12 and 36 hours) after eating toxin-containing food. Symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, muscle weakness that always descends through the body: first shoulders are affected, then upper arms, lower arms, thighs, calves, etc. Paralysis of breathing muscles can cause a person to stop breathing and die, unless the patient receives respiratory assistance with mechanical ventilation.

Botulism is not spread from one person to another. Foodborne botulism can occur in all age groups.

A supply of antitoxin against botulism is maintained by the Centers for Disease Control and Prevention (CDC). The antitoxin is effective in reducing the severity of symptoms if administered early in the course of the disease. Most patients eventually recover after weeks to months of supportive care.

SMALLPOX

Smallpox infection was eliminated from the world in 1977. The disease is caused by the variola virus. The incubation period is about twelve days (range: seven to 17 days) following exposure. Initial symptoms include high fever, fatigue, and head and back aches. A characteristic rash, most prominent on the face, arms, and legs, follows in two to three days. The rash starts with flat red lesions that evolve at the same rate. Lesions become pus-filled and begin to crust early in the second week. Scabs develop and then separate and fall off after about three to four weeks. The majority of patients with smallpox recover, but death occurs in up to 30 percent of cases.

Smallpox is spread from one person to another by infected saliva droplets that expose a susceptible person having face-to-face contact with the ill person, as well as by contact with the skin lesions or scabs. Persons with smallpox are most infectious during the first week of illness, because that is when the largest amount of virus is present in saliva. However, some risk of transmission lasts until all scabs have fallen off.

Routine vaccination against smallpox ended in 1972. The level of immunity, if any, among persons who were vaccinated before 1972 is uncertain; therefore, these persons are assumed to be susceptible.

The United States currently has an emergency supply of smallpox vaccine, but vaccination against smallpox is not recommended to prevent the disease in the general public and therefore is not available. At the present time, the risk of adverse effects from the vaccine is higher than the risk of acquiring the disease.

In people exposed to smallpox, the vaccine can lessen the severity of or even prevent illness if given within four days of the exposure. Vaccine against smallpox contains another live virus called vaccinia. The vaccine does not contain smallpox virus.

There is no proven treatment for smallpox but research to evaluate new

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The Role of EMS in Responding to Bioterrorism Threats and Incidents

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antiviral agents continues. Patients with smallpox can benefit from supportive therapy (intravenous fluids, medicine to control fever or pain, etc.) and antibiotics for any secondary bacterial infections that occur.

TULAREMIA

The bacterium that causes tularemia is one of the most infectious agents ever discovered. Inhaling as few as ten organisms may be sufficient to cause infection. *Francisella tularensis* can infect humans through the skin, mucous membranes, gastrointestinal tract and lungs. Three to five days after infection with airborne *F. tularensis*, patients typically experience sudden onset of fever, fatigue, chills, headache and malaise. Some develop shortness of breath and chest pain from pneumonia, conjunctivitis from exposure of the eye, infected skin ulcers, pharyngitis, oral ulcers and sepsis, which can be fatal. The illness cannot be transmitted from person to person.

Appropriate antibiotics can prevent the more serious complications of the disease. A 14 day course of antibiotics can also prevent infection in those who have been exposed.

VIRAL HEMORRHAGIC FEVERS

The term viral hemorrhagic fever (VHF) refers to a group of illnesses that are caused by several distinct families of viruses. While some types of hemorrhagic fever viruses can cause relatively mild illnesses, many of these viruses cause severe, life-threatening disease. Humans are not the natural reservoir for any of these viruses. Humans are infected when they come into contact with infected hosts such as the deer mouse, house mouse, other field rodents, ticks and mosquitoes. However, with some viruses, after the accidental transmission from the host, humans can become infected through close contact with infected people or their body fluids. With a few noteworthy exceptions, there is no cure or established drug treatment for VHFs.

Specific signs and symptoms vary by the type of VHF, but initial signs and symptoms often include marked fever, fatigue, dizziness, muscle aches, loss of strength, and exhaustion. Patients with severe cases of VHF often show signs of bleeding under the skin, in internal organs, or from body orifices like the mouth, eyes, or ears. Although they may bleed from many sites around the body, patients rarely die because of blood loss. Severely ill patients may also experience shock, nervous system malfunction, coma, delirium, and seizures. Some types of VHF are associated with renal (kidney) failure.

Once symptoms appear, patients receive supportive therapy, but generally speaking, there is no other treatment or established cure for VHFs.

With the exception of yellow fever and Argentine hemorrhagic fever, for which vaccines have been developed, no vaccines exist that can protect against these diseases. For those hemorrhagic fever viruses that can be transmitted from one person to another, avoiding close physical contact with infected people and their body fluids is the most important way of controlling the spread of disease.

Summary

Although the risk of a bioterrorism incident in Vermont is very low, we must plan for the possibility. Through preparation, we can minimize the damage from intentionally caused illnesses without causing hysteria among members of the public. At a potential bioterrorism incident, numerous agencies will need to work together under Unified Command and the Incident Command System.

The role of EMS at such an incident is small but important. After appropriately trained and equipped personnel have decontaminated an exposed patient, EMS treats and transports the ill or injured person. If a patient is not contaminated, EMS treats and transports as usual.

The traditional maxim "Don't just stand there — do something!" has, to a certain extent, been replaced in these situations by "Don't just do something — stand there!" The hazards of acting rashly are significant. In the case of a bioterrorism threat, the safer route usually lies in taking measured, thoughtful action after education and preparation.

— Mike O'Keefe
EMS Training Coordinator

MARK YOUR CALENDAR!

2002 EMS **Conference**

April 6 & 7

Preconference
April 3, 4 & 5

Answers to Scrambler on page 3:

SCENE SAFETY

BANDAGE, BASIC, FEMORAL, NURSE, RHYTHM

HARDWICK KIWANIS CLUB
Theresa Lambert Davis, Club President (802) 472-5081
PO Box 856 • Hardwick, Vermont 05843-0856
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The Hardwick Kiwanis Club will be holding The Kiwanis Pediatric Trauma Training in Hardwick on Saturday, March 16, 2002. This program will be presented by Richard E. Murphy, P.A. Assistant Director for Education, Kiwanis Pediatric Trauma Institute; Assistant Professor of Surgery, Tufts University School of Medicine; Department of Surgery, New England Medical Center; Boston, Massachusetts, and is very highly recommended.

Pediatric Trauma Management

SATURDAY, 16 MARCH 2002
Location: Hazen Union High School Auditorium
North Main Street, 126 Hazen Drive, Hardwick, Vermont
Seating is limited—please register early!
Sponsored by: Kiwanis Club of Hardwick—For additional information, contact Theresa L. Davis (802) 472-5081.

Saturday 16 March 2002

8:00 am	Registration & Coffee
8:25 am	Welcome
8:30 am	The Physiology of Injury • The epidemic of trauma • Anatomical and physiological differences between a child and an adult • The effects of hemorrhage on children
9:55 am	The First 20 Minutes After Injury • Priorities of care for a child with multiple injuries at the scene and enroute to the hospital • The primary and secondary survey • The emergency department care of the multiply injured child
11:20 am	Emergency Care of Children • Legal Issues and Responsibilities • Equipment • Organizations
12:00 pm	Case Studies in Pediatric Trauma
1:30 pm	Summary Question and Answer session

Note: There is a 10 minute break incorporated into each section. Refreshments will be served.

Richard E. Murphy, P.A.
Assistant Director for Education, Kiwanis Pediatric Trauma Institute
Assistant Professor of Surgery, Tufts University School of Medicine
Department of Surgery, New England Medical Center; Boston, Massachusetts

Please detach and mail with registration fee.
Registration fee is $40.

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Change of name and address form:

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